The endovascular treatment of CFA: open surgery is still the gold standard

G Pratesi, MD
Associate Professor of Vascular Surgery
University of Rome “Tor Vergata”
giovanni.pratesi@uniroma2.it
Disclosure of Interest

Giovanni Pratesi, M.D.

I have the following potential conflicts of interest to report:

✓ Consulting: Abbott, Cook, Cordis, Medtronic, WL Gore & Associates

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest
Clinical case

- A.C., male, 69 yrs
- Active smoker (20 sig/die), hypertension, diabetes (NIDDM), dyslipidemia
- Chronic coronary artery disease (previous IMA - PCI, 2015)

- 2017: right critical lower limb ischemia (rest pain)
Vascular history

• Previous aorto-iliac kissing stenting + right common-external iliac artery stenting (2015) with balloon-expandable stent
• Bilateral external iliac artery stenting (2016) with self-expandable stent
• Previous right CFA endarterectomy + patch angioplasty (2016) complicated by wound infection (VAC therapy)
• ABI: 0.4 right; 0.6 left
Preoperative AngioCT: multilevel disease
Preoperative AngioCT: aorto-iliac
Preoperative AngioCT: fem-pop
Chapter IV: Treatment of Critical Limb Ischaemia

An advantage of surgical treatment of atherosclerotic disease of the CFA is that it provides the potential to endarterectomise adjacent diseased segments of the deep femoral artery (DFA) and the proximal superficial femoral artery (SFA).

Placing a stent in the CFA may increase risk of potential future surgical interventions and limit future access for endovascular revascularization in this location.

Recommendation
Endarterectomy of atherosclerotic disease of the common femoral artery provides excellent results with limited morbidity and mortality and is the standard treatment in this location. (Level 4; Grade C)
Common femoral artery occlusive disease: Contemporary results following surgical endarterectomy

Jeanwan L. Kang, MD, Virendra I. Patel, MD, Mark F. Conrad, MD, Glenn M. LaMuraglia, MD, Thomas K. Chung, MA, and Richard P. Cambria, MD, Boston, Mass

65 limbs in 58 patients; 21 cases (32%) for CL; 37 (57%) performed as hybrid

<table>
<thead>
<tr>
<th>Interval</th>
<th>“At risk”</th>
<th># of events</th>
<th>Cumulative patency</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary patency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1 y</td>
<td>65</td>
<td>4</td>
<td>.93</td>
<td>.03</td>
</tr>
<tr>
<td>1-2 y</td>
<td>52</td>
<td>1</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>2-3 y</td>
<td>33</td>
<td>0</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>3-4 y</td>
<td>17</td>
<td>0</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>4-5 y</td>
<td>3</td>
<td>0</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>Assisted patency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1 y</td>
<td>65</td>
<td>0</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>1-2 y</td>
<td>56</td>
<td>0</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>2-3 y</td>
<td>36</td>
<td>0</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>3-4 y</td>
<td>19</td>
<td>0</td>
<td>1.00</td>
<td>.00</td>
</tr>
<tr>
<td>4-5 y</td>
<td>3</td>
<td>0</td>
<td>1.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interval</th>
<th>“At risk”</th>
<th># of events</th>
<th>Cumulative freedom</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom from reintervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1 y</td>
<td>65</td>
<td>11</td>
<td>.82</td>
<td>.05</td>
</tr>
<tr>
<td>1-2 y</td>
<td>47</td>
<td>2</td>
<td>.78</td>
<td>.05</td>
</tr>
<tr>
<td>2-3 y</td>
<td>29</td>
<td>0</td>
<td>.78</td>
<td>.05</td>
</tr>
<tr>
<td>3-4 y</td>
<td>17</td>
<td>0</td>
<td>.78</td>
<td>.05</td>
</tr>
<tr>
<td>4-5 y</td>
<td>3</td>
<td>0</td>
<td>.78</td>
<td>.05</td>
</tr>
</tbody>
</table>

CFE should remain the standard of care for occlusive disease of the CFA. Its safety and efficacy establish a standard for comparison with emerging endovascular therapies.
Open surgery for common femoral artery stenosis is safe and effective in the long-term. Endovascular therapy will need to compete with these excellent results.

Primary patency at 7 y: 78.5%
Secondary patency at 7 y: 89.1%
Postoperative complications after common femoral endarterectomy

Bao-Ngoc Nguyen, MD, Richard L. Amdur, PhD, Mustafa Abugideiri, BS, Rodeen Rahbar, MD, Richard F. Neville, MD, and Anton N. Sidawy, MD, MPH, Washington, D.C.

1843 patients in the National Surgical Quality Improvement Program database undergone isolated CFE between 2005 and 2010

- Average operative time: 146±69.5 minutes
- 10% of patients needed to return to the OR
- Average length of stay: 4±7.5 days
- 91% of patients were discharged ≤1 week of surgery

Conclusions: CFE is not as “benign” a procedure as previously believed. The risks of death and wound complications are not insignificant, and a high percentage of these complications occurred after patients were discharged from the hospital.
1014 patients with isolated CFA intervention (946) with or without a DFA intervention (68)

**Conclusions:** Endovascular interventions of the CFA/DFA have a low rate of periprocedural morbidity and mortality. One-year patency is lower than historically observed for CFA endarterectomy. Stent use is associated with reinterventions and amputation. Longer-term analysis is needed to better assess durability. (J Vasc Surg 2016;■:1-8.)
Long-Term Outcomes of Common Femoral Artery Stenting

Bahaa Nasr,1 Adrien Kaladji,2 Pierre-Alexandre Vent,3 Philippe Chaillou,3 Alain Costargent,3 Thibault Quillard,4,5 and Yann Gouëffic3,4,5 Brest, Rennes, Nantes, and France

Conclusions: Endovascular repair of the CFA and its bifurcation seems to provide sustained clinical and morphological long-term results. Fear of stent fracture and local complications due to hip mobility are no longer relevant.
CFA-PFA stenting
167 patients with R3 and R4 to R6 disease underwent CFA interventions.

- Treatment included PTA only (68.2%), atherectomy+PTA (22.8%).
- Provisional stenting (9.0%) for failed atherectomy 6 PTA.

**Conclusions:** Data from this study to date would suggest that percutaneous CFA interventions in select patients are relatively safe and effective. In the long term, CFA stenting has significantly better primary patency than CFA atherectomy and PTA combined. CFA atherectomy + PTA has significantly better primary patency than CFA PTA-only at midterm, especially in patients with claudication. Future randomized controlled trials are warranted. (J Vasc Surg 2016;64:369-79.)
Preoperative AngioCT: fem-pop
Our strategy

HawkOne™ Directional Atherectomy + IN.PACT Admiral Drug-Coated Balloon
Atherectomy + DCB
Atherectomy + DCB
CFA and SFA Atherectomy (HawkOne™) + CFA-PFA and SFA DCB (IN.PACT Admiral)
Atherectomy + DCB
Atherectomy + DCB
Atherectomy + DCB
Postoperative course

• Discharge in 2\textsuperscript{nd} post-op day
• Normal duplex scan examination with palpable posterior and anterior tibial pulses
• Right ABI: 0.9

• At 1 \textbf{months}, new onset of right lower limb claudication with rapid progression to rest pain
• Duplex scan examination revealed severe diffuse CFA and PFA restenosis with SFA reocclusion
• Right ABI: 0.4
Postop AngioCT
Postop AngioCT: aorto-iiac
Postop AngioCT: fem-pop
Pre vs postop AngioCT

And now...Open Surgery
Common femoral endarterectomy and profundoplasty with patch
Iliac axis relining with stent-graft (Viabahn 7x150)
Common femoral endarterectomy and profundoplasty with patch
Common femoral endarterectomy and profundoplasty with patch
Common femoral endartectomy and profundoplasty with patch
Common femoral endarterectomy and profundoplasty with patch
Conclusions

• Surgical endarterectomy remains the gold standard therapy for common femoral artery stenosis

• Multilevel peripheral arterial diseases can be successfully managed by hybrid techniques with high technical success and long term patency rates

• Endovascular approach with new generation stent can be an ideal complementary treatment in highly selected patients